

POSITION OF MARSUPIALS

in *Myrmecobius* (alone) is the third toe the longest ; and no great difference can be detected between the third and fourth toes in the case of the genera *Phascologcde*, *Didelpjiys*, and some others. Professor Leche compares the predominance of the fourth toe with the hyperphalangeal condition in the fourth toe of the embryo Crocodile, and considers it an archaic feature, not surpassed by the ancient characteristics of the Monotremata. Again it has been pointed out that in *Phascologcde* and *JPerameles*, the epistropheus (axis vertebra) has a separate rib as in *Ornithorhynchus*. In the third place, the likeness of the teeth of *Myrmecobius* to those of *Ornithorhynchus* is an argument in the same direction, which is furthermore supported by the great age (Mesozoic) of the Meta-therian group, if we are right in regarding those extinct creatures - as Marsupials.

We may now mention certain facts which are not so generally used. The partly primitive structure of the right auriculo-ventricular valve in the Monotremata has no counterpart in any Marsupial which has been dissected ; but there are traces in the latter of the characteristic " ventral mesentery " of *Ornithorhynchus* and *JSchidna*^ Mr. Caldwell's interesting observation upon the segmenting egg of the Marsupial, the incompleteness of the first segmentation furrow (reminding us of the meroblastic ovum of the Monotreme), may possibly not turn out to be so exclusively Marsupial a feature as has been thought.

The balance of evidence thus points to the nearer relationship of the Marsupials to the Eutherian mammals ; and their great specialisation combined with certain evidences of degeneration (disappearance in part of the milk dentition), and their age, point to the fact that they are, at any rate, the descendants of an early form of Eutherian. But they must have separated from the Eutherian stock after it had acquired a definite diphyodonty and the allantoic placenta, the two principal features of the Eutherian as opposed to the Prototherian mammals.

Nevertheless it seems probable that the Marsupial tribe is derived from some of the earliest Eutherians. And on this view

may be explained the retention of Prototherian characters.

The remaining Eutheria are obviously all to be referred to one great division with the possible exception of the Whales, whose affinities form one of the principal difficulties to the student

¹ In *Dendrolagus* at any rate. See *Proc. Zool* Soc** 1895, p. 132.